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UNITED STATES
DEPARTMENT OF
AGRICULTURE

Forest Service

Northern Region

ANNUAL REGIONAL FIRE REPORT

CALENDAR YEAR 1988

During 1988, the following people retired after a long association with Aviation and Fire Management. We wish them the best:

Ed Brown	Deerlodge NF
Lynn Mason	Lolo NF
Tom Reese	Lolo NF
Larry Eisenman	Aviation and Fire Management
Jerry Hinman	Bitterroot National Forest
John McCulloch	Regional Office

The two Northern Rockies Class I Incident Commanders--Dave Poncin and Ron Curtiss--ended a long career of serving on Incident Command Teams in 1988. We thank them and their teams for a job well done.

IN MEMORIUM

Frank Sanders, smokejumper, killed in private airplane crash

Bob Morgan, Forest Supervisor, Bitterroot National Forest, gave 50 years of service to Forest Service Fire Management

Patrick David, firefighter killed by falling snag, Red Bench Fire, Flathead National Forest

Cheryl Old Horn Deputy, firefighter killed in engine accident Brush Coulee Fire, Crow Indian Reservation

5100

Missoula, Montana

December 1988

Northern Region

ANNUAL REGIONAL FIRE REPORT

Calendar Year 1988

JAMES F. MANN
Director, Aviation and Fire
Management

TABLE OF CONTENTS

	Page
Dedication	1
General	2
1988 Fire Weather Season Summary	3
Fire Weather Activities	8
Wildfire Statistics	9
Number of Fires and Acres Burned by Forest	11
1988 Wildfire Summary	12
Fire Planning, Programs and Computer Applications	13
Fire Use	13
Aviation Management	18
Fire Cache	18
Cooperative Fire and Prevention	18
Training	20
Retardant Use	20
Northern Rocky Mountain Area Overhead Team Dispatches	21
Structural Protection/Cooperation	23
Civil Rights Officer Position	23
Critical Incident Stress Debriefing	23
Retirees	23
Crew Use	24
Canadians	24
Military	24
Logistical Support	25
Interregional Hotshot Crews	25
Fireline Explosives	26
Smokejumpers	26
Aircraft Use Report	30
Personnel Employed on Wildfire Presuppression and Suppression Activities	38
Land Ownership Protection Report	39

DEDICATION

This annual fire report is dedicated to Northern Region District, Forest, and Regional Fire Management personnel in grateful appreciation for their services during the 1988 fire season.

JAMES F. MANN
Director of Aviation and Fire Management

GENERAL

After last year we wondered how a person would describe the 1987 season which was one of the longest and busiest seasons of record. Looking back at the 1987 season it now seems relatively simple if we compare it to 1988.

In 1988, in the Northern Region, there were more days of extreme burning conditions than any other year in recorded history. New maximum levels of energy release, burning indices, and rates of spread were established at many fire danger recording stations. The fire behavior observed this year baffled the experts and old timers with its unprecedented and never before observed intensity. There were several days when over 100,000 acres burned and one day, September 6, nearly one-half million acres went up in smoke. September 10 was the date of the largest commitment of resources and equipment of the season. Twenty major fires were burning in the Region on that day, not including Yellowstone National Park.

We saw the heaviest commitment of fire suppression resources ever in our history. All sorts of records were broken. Every available trained crew and overhead team was used. The Montana and Idaho National Guard, two battalions of regular military, and trained crews from Canada were called into action before it was over.

The interagency cooperation and approach to the total effort was outstanding! Eight Federal, eight State, and numerous county and local agencies worked together for the common cause. Interest and involvement by top State government officials from the Governors down, provided a sense of direction and support. Help came from all 50 States, Washington, D.C., and the Virgin Islands. Area residents endured the inconvenience of fire and activity restrictions with minimum complaint. Many provided assistance to the effort without compensation. Voluntary reductions in their means of livelihood by timber companies, loggers, livestock operators, outfitters, etc., were especially helpful. Many gave up their summer to work on fires or stayed out of the woods altogether.

In spite of the unprecedented burning conditions, over 2,900 interagency incidents never made the headlines and were successfully suppressed by initial attack crews. These are the local District crews or smokejumpers that hit the fires fast and hard while they were still small. If it weren't for the efforts of these people, the season would have been much worse.

Firefighting is always hazardous. Unfortunately, there were injuries and sadly two fatalities. Patrick David was killed when struck by a snag on the Red Bench Fire, Flathead National Forest, and Cheryl Old Horn Deputy lost her life on the Brush Coulee incident on the Crow Indian Reservation. In spite of this, the safety record was remarkable, considering the duration, intensity, and number of people and machines involved. Still we are saddened by these accidents.

Where and when did the 1988 season start? It began with a Montana State fire near Whitehall, Montana, on February 21, 1988. This was a 2,400-acre fire that destroyed 39 buildings and left four families homeless. For the Northern Rocky Mountain Area this is very early even east of the Continental Divide.

The number of fires (1,436) was above average and acres burned (594,138) was almost as great as 1910.

And what about next year? We will have to wait and see what 1989 will bring. We obtained new knowledge and new experience in 1988. If need be, we can do it again and do it better because of what we've learned.

There were lots of highlights and firsts in 1988. Just to name a few:

** Total acres burned, including all agencies within the Northern Rocky Mountain Area (excluding Yellowstone Park) was close to 1.2 million.

** First use of MAFFS in the Northern Rocky Mountain Area.

** The most gallons of retardant dropped in the history of MAFFS (1,644,000 gallons).

** MAFFS operated out of Helena 4 days short of 30 days--one of the longest operations in MAFFS history.

** Eight military battalions were deployed (six in Greater Yellowstone Area and two on the Canyon Fire).

** Critical Incident Stress Debriefing Teams and Civil Rights Officers were used for the first time on fire assignments.

** Water gel fireline explosive introduced to wildfire line use.

** INCINET was tested on several fires.

** All Forest Service employees contributing to the 1988 fire suppression efforts will be presented with a full color booklet of approximately 20 pages, depicting highlights of the 1988 fire season. Each booklet will contain a full color map showing the location of the major fires, as well as a personal letter from the Regional Forester.

** Dan Bailey, Lolo National Forest, established the Wildland Section in NFPA and became its first chairman.

** The Beaverhead/Deerlodge Interagency Dispatch Center was relocated from Butte to Dillon, Montana.

The list could go on and on and will for some time or until someplace has an even larger occurrence.

1988 FIRE WEATHER SEASON SUMMARY

The 1988 fire season in the Northern Rockies will be remembered for many years because of its severity. Record heat and dryness were major contributors to the extreme burning conditions. The continuation of drought type conditions from 1987 added to the seriousness of the situation. The Drought Severity Chart at the end of the 1987 season (Figure 1) showed all of Region 1 in drought conditions, with areas in northern Idaho and west of the Continental Divide in Montana in moderate to extreme conditions. These dry conditions were definitely precursors of things to come.

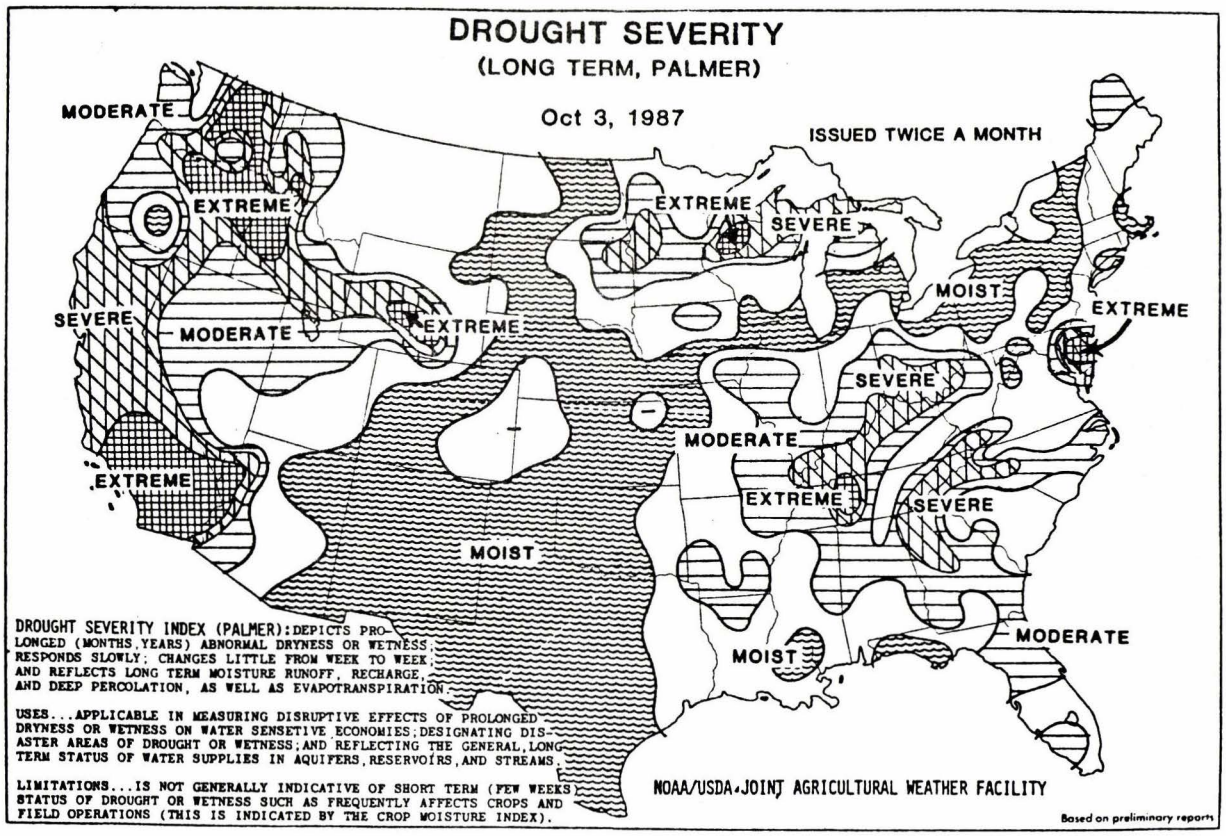

DROUGHT SEVERITY
(LONG TERM, PALMER)
Oct 3, 1987
ISSUED TWICE A MONTH
MODERATE
EXTREME
SEVERE
MOIST
EXTREME
SEVERE
MODERATE
EXTREME
EXTREME
SEVERE
MODERATE
EXTREME
SEVERE
MOIST
MODERATE
MOIST
DROUGHT SEVERITY INDEX (PALMER):DEPICTS PRO-LONGED (MONTHS,YEARS) ABNORMAL DRYNESS OR WETNESS; RESPONDS SLOWLY; CHANGES LITTLE FROM WEEK TO WEEK; AND REFLECTS LONG TERM MOISTURE RUNOFF, RECHARGE, AND DEEP PERCOLATION, AS WELL AS EVAPOTRANSPIRATION.
USES...APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED DRYNESS OR WETNESS ON WATER SENSETIVE ECONOMIES;DESIGNATING DIS-ASTER AREAS OF DROUGHT OR WETNESS;AND REFLECTING THE GENERAL,LONG TERM STATUS OF WATER SUPPLIES IN AQUIFERS,RESERVOIRS,AND STREAMS.
LIMITATIONS...IS NOT GENERALLY INDICATIVE OF SHORT TERM (FEW WEEKS) STATUS OF DROUGHT OR WETNESS SUCH AS FREQUENTLY AFFECTS CROPS AND FIELD OPERATIONS (THIS IS INDICATED BY THE CROP MOISTURE INDEX).
NOAA/USDA-JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary reports

Figure 1

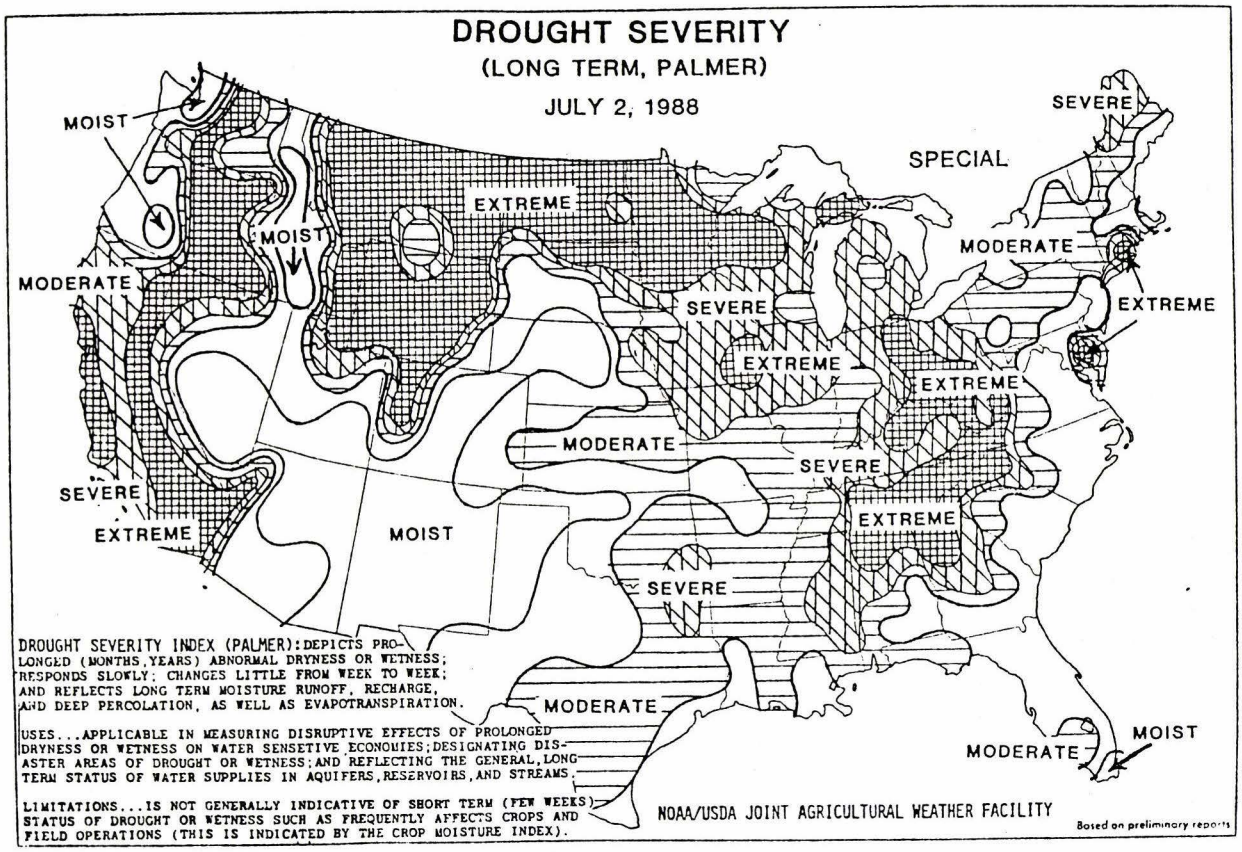
October, November, and December 1987.--October was a perfect example of a beautiful Indian Summer. Temperatures were near normal across the Region, and precipitation was only about 10 percent of normal. Temperatures were moderate through November and averaged a few degrees above normal over northern Idaho and western Montana. Precipitation for November averaged between 25 and 50 percent of normal. For December, temperatures cooled to a few degrees below normal in western portions of the Region but were about 7 degrees above normal across the eastern one third of Montana. Precipitation increased to near normal over northern Idaho in December; however the eastern one third of Montana continued quite dry with less than 25 percent of normal.

January, February, and March 1988.--The winter months were characterized by above normal temperatures, averaging about 5 degrees above normal for the three month period all across the Region. Precipitation was not as uniform... January provided only about 25 to 50 percent of normal in most sections; however extreme eastern Montana was close to normal. February was dry with only about 25 to 50 percent of normal moisture in most sections with only south central Montana receiving near normal amounts of precipitation. March was much wetter over northern Idaho with those sections receiving about 150 percent of normal. Precipitation was near normal for the western counties of Montana, but central and eastern Montana averaged about 50 to 60 percent of normal moisture in March. Snow survey data for March 1 indicated most of the Region's snow courses at about the 70 percent level. Portions of the Bitterroot, Beaverhead, Deerlodge, and Lolo National Forests had a little more snow, but still less than 90 percent of normal.

April, May, and June 1988.--April showed a continuation of the warm pattern. Temperatures averaged about 5 degrees above normal across the Region. Moisture was again variable with less than 25 percent of normal

accumulating east of the Rockies, while western portions of Montana along with northern Idaho enjoyed near normal moisture. The May and June period is usually the wettest time of the year for areas west of the Continental Divide. This proved true for portions of the Region along and west of the Rockies. East of the mountains the dry pattern continued with only 25 to 50 percent of normal moisture accumulating during May and June. Temperatures were near normal through this period along and west of the Continental Divide, while areas east of the mountains experienced temperatures from 6 to 12 degrees above normal.

July, August, and September 1988.--The summer of 1988 was a record setting period for both temperatures and dryness from the east slopes of the Rocky Mountains through the Upper Midwest and Lake States. The Drought Severity Chart issued on July 2 (Figure 2) depicts all of Region 1 in moderate to extreme drought conditions except northern Idaho. Active early season fires in eastern Montana verified the drought conditions. The lack of moisture and the dryness of fuels contributed to the intense and severe early summer fire behavior.


DROUGHT SEVERITY
(LONG TERM, PALMER)
JULY 2, 1988
MOIST
MODERATE
MOIST
EXTREME
SEVERE
EXTREME
MOIST
SEVERE
EXTREME
SPECIAL
SEVERE
MODERATE
EXTREME
EXTREME
EXTREME
MODERATE
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DROUGHT SEVERITY INDEX (PALMER): DEPICTS PROLONGED (MONTHS, YEARS) ABNORMAL DRYNESS OR WETNESS; RESPONDS SLOWLY; CHANGES LITTLE FROM WEEK TO WEEK; AND REFLECTS LONG TERM MOISTURE RUNOFF, RECHARGE, AND DEEP PERCOLATION, AS WELL AS EVAPOTRANSPIRATION.
USES...APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED DRYNESS OR WETNESS ON WATER SENSETIVE ECONOMIES; DESIGNATING DISASTER AREAS OF DROUGHT OR WETNESS; AND REFLECTING THE GENERAL, LONG TERM STATUS OF WATER SUPPLIES IN AQUIFERS, RESERVOIRS, AND STREAMS.
LIMITATIONS...IS NOT GENERALLY INDICATIVE OF SHORT TERM (FEW WEEKS) STATUS OF DROUGHT OR WETNESS SUCH AS FREQUENTLY AFFECTS CROPS AND FIELD OPERATIONS (THIS IS INDICATED BY THE CROP MOISTURE INDEX).
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary reports

Figure 2

A review of weather records from 1931 through mid 1988 indicate the May through July period of 1988 was the hottest recorded for all of Region 1 east of the Continental Divide, including the areas in the southern part of the Deerlodge NF and the Beaverhead NF (Figure 3).

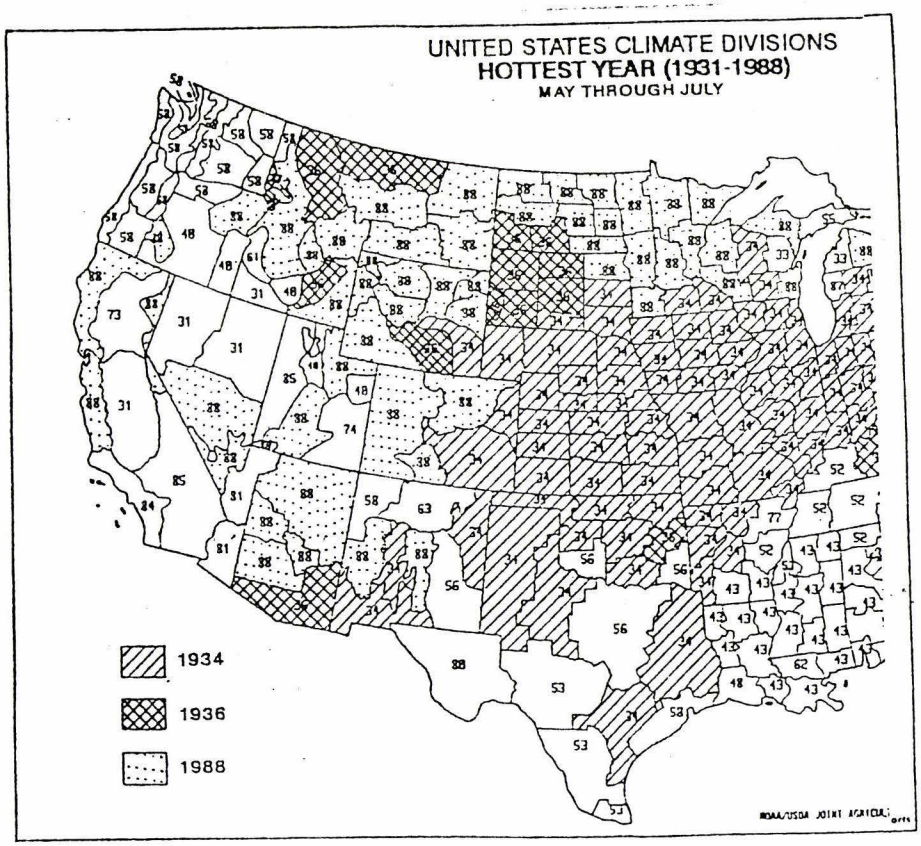

Figure 3

Precipitation for July over northern Idaho and a small portion of western Montana averaged from 150 to 200 percent of normal; areas east of the Rockies were very dry with less than 25 percent of normal moisture received. Temperatures in July averaged near normal over the west to about 4 degrees above normal in the eastern portions of the Region.

The lack of moisture in the May through July period established records over much of the Region (Figure 4).

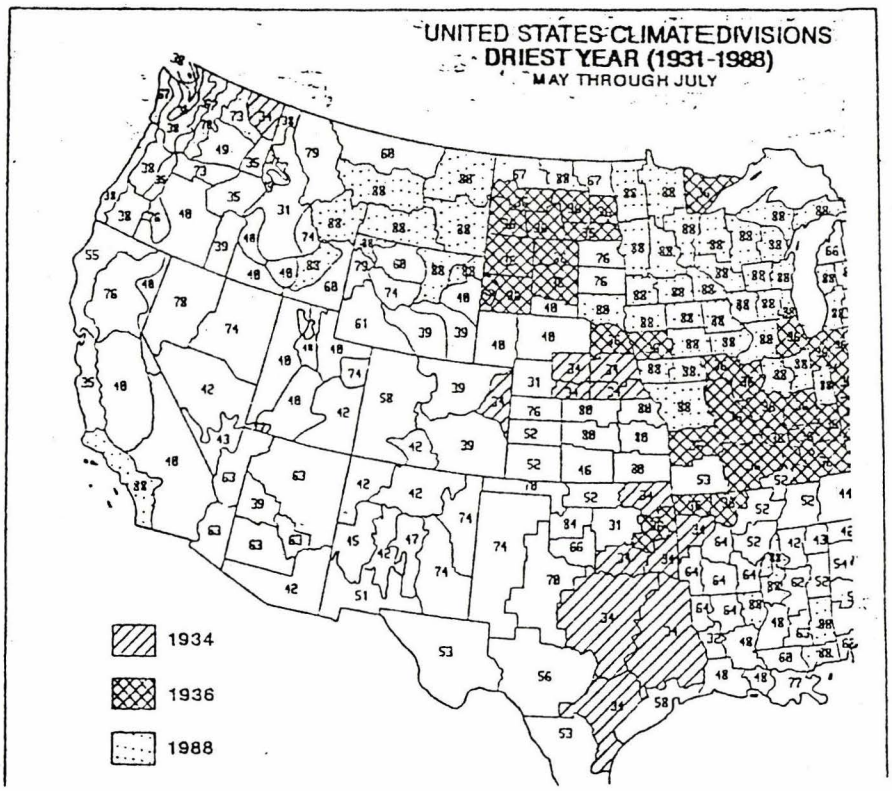

Figure 4

August climatic data shows temperatures about 2 degrees above normal across the Region. Precipitation ranged from none to about 50 percent of normal; however, there was spotty heavier precipitation in portions of the Bitterroot and Crazy Mountains.

The back of the fire season was broken in mid-September as most portions of the Region received appreciable moisture during the middle third of the month. Precipitation amounts averaged 100 to 200 percent of normal east of the Rockies, most of the Idaho zones received 50 to 70 percent of normal moisture. The moisture was significant both in quantity and timing. Moisture amounts were enough to aid fire control, and the timing was such to provide relief to strained resources. Freezing levels were low enough to bring snow by mid month to many areas having fire problems. Some fires made significant runs in early September due to strong wind events. These wind events were associated with Pacific weather fronts that were generally dry. Winds in some areas were recorded in excess of 40 mph, with much higher velocities estimated at higher elevation stations.

Summary.--The continuation of drought conditions over most of the Region through the 1988 fire season was a major factor in the extent and severity of the season. Thunderstorms, although not unusually numerous, provided very little moisture. Dry lightning was responsible for numerous fire ignitions. In addition, strong winds were a factor that contributed to rapid fire growth on many incidents.

FIRE WEATHER ACTIVITIES

The level of fire weather support to all land management agencies during 1988 is another reflection of the severity of the season. The regular daily forecasts provided the baseline weather information for land managers. Special "Spot Weather Forecasts" provided guidance for many fire officials faced with difficult decisions concerned with wild fire and prescribed fire activity. A total of 259 Spot Forecasts were provided by the Billings Fire Weather Office. The Missoula Fire Weather Office provided 660 Spot Forecasts, nearly half of which were in support of wildfires.

Direct field support to wildfire suppression activities over-extended local resources. A total of eleven forecasters from all over the country spent 152 person days in support of fourteen separate fire incidents spanning the period from June 24 through September 18.

The following is a summary of wildfire support:

Fire	Number of Forecasters	Days Supported
Brewer	1	6
Storm Creek	3	33
Flex	1	6
Rock Creek	1	5
Lodgepole	1	5
Warm Springs	1	20
Lost Canyon	1	6
Slick	1	5
Ladder	2	19
Combination	1	5
Dry Fork	1	11
Canyon Creek	1	13
Jay West	1	13
Red Bench	1	5

In addition, Brenda Graham of the Missoula Office provided 13 days on site support to the North Fork Fire on the Targhee NF and Yellowstone NP.

The Missoula Office provided direct briefing support twice daily to the Regional Incident Coordinating Organization (RICO) and the Multi-Agency Coordinating (MAC) Group during its existence through the height of the fire season activity.

WILDFIRE STATISTICS

Occurrence

Year	Lightning	Person-Caused	Total
1983	361	152	513
1984	1,016	325	1,341
1985	921	307	1,228
1986	897	230	1,126
1987	562	563	1,125
5-year average	751	315	1,066
1988	998	438	1,436

Acres Burned

Year	Lightning	Person-Caused	Total
1983	757	977	2,734
1984	1,268	20,718	21,986
1985	31,714	6,434	38,148
1986	19,649	1,285	21,034
1987	6,833	12,647	19,480
5-year average	12,044	8,412	20,456
1988	284,490	309,648	594,138

Statistical Causes of Person-Caused Fires

Cause	1983	1984	1985	1986	1987	**5-year average**	1988
Equipment Use	11	39	31	19	32	26	50
Smoking	20	40	24	23	61	34	45
Campfire	40	80	58	52	218	90	121
Debris burning	32	60	84	50	104	73	71
Railroad	11	13	24	27	28	21	30
Children	7	12	9	9	12	10	20
Arson	5	11	18	7	12	11	9
Miscellaneous	26	70	34	43	96	54	93
Total	153	325	307	230	563	319	438

Wildfire Occurrence by Size Class

	Class							
	A	B	C	D	E	F	G	Total
LIGHTNING								
1988	588	316	46	12	9	10	17	998
5-year average (1983-1987)	556	169	17	4	4	2	1	753
PERSON-CAUSED								
1988	258	116	25	15	5	12	7	438
5-year average (1983-1987)	209	83	15	4	3	1	1	316
TOTAL ALL FIRES								
1988	846	432	71	27	14	22	24	1,436
5-year average (1983-1987)	765	252	32	8	7	3	2	1,069

Class A = .25 acre or less
Class B = .26 acre to 9.9 acres
Class C = 10 to 99.9 acres
Class D = 100 to 299.9 acres
Class E = 300 to 999.9 acres
Class F = 1,000 to 4,999.9 acres
Class G = 5,000 or more acres

NUMBER OF FIRES AND ACRES BURNED BY FOREST

	Number of fires			Acres burned		
Forest	Lightning	Person-caused	Total	Lightning	Person-caused	Total
Beaverhead	28	25	53	4,079	2,595	6,674
Bitterroot	106	22	128	25,854	5,775	31,629
Clearwater	113	11	124	2,078	1,298	3,376
Custer	163	21	184	81,533	46,006	127,539
Deerlodge	20	16	36	35	9,579	9,614
Flathead	75	26	101	8,583	129	8,712
Gallatin	22	37*	59	10	108,905**	108,915
Helena	41	16***	57	44,280	40,609	84,889
Idaho Panhandle	59	58	117	363	747	1,110
Kootenai	69	79	148	13,080	81	13,161
Lewis & Clark	38	6***	44	845	52,527****	53,372
Lolo	140	102	242	122	39,075	39,197
Nezperce	124	19	143	103,628	2,322	105,950
Total	998	438	1,436	284,490	309,648	594,138

* Includes Clover Mist and North Fork Fires (these fires corssed on to the Gallatin from Yellowstone National Park and Region 4). Does not include Storm Creek Fire (included in Custer numbers).

** Includes Clover Mist, North Fork, and Storm Creek acres.

*** Does not include Canyon Creek Fire (this fire is listed in Lolo numbers).

**** Includes Canyon Creek acres.

1988 WILDFIRE SUMMARY

The following includes Montana, North Idaho, North Dakota, NW South Dakota, and the Greater Yellowstone Area:

PERSONNEL:

Maximum number of crews on fires	479 on September 4, 1988.
Total number of personnel on fires at peak of season	15,700 on September 10, 1988
Maximum number of smokejumpers on fires at one time	203 on Aug. 30, 1988
Total military personnel on fires	8 Battalions (6 Army, 2 Marines) 6,150
Maximum number of Montana National Guard on fires	442 on September 10, 1988.
Maximum number Idaho National Guard on fires	40

EQUIPMENT:

Maximum number of engines at one time	448 on September 13, 1988
Maximum number of helicopters	96 on September 16, 1988
Maximum number of Montana National Guard vehicles used	174 on September 10, 1988
Maximum number of Montana National Guard helicopters used	8 on September 10, 1988
Maximum number of Idaho National Guard vehicles	16
Maximum number of Idaho National Guard helicopters used	2
Maximum number of North Dakota National Guard helicopters used	6

COSTS:

Approximate cost to Forest Service Northern Region	$74 million as of 9/30/88

OTHER:

Total retardant dropped	5,432,050 gallons
Supplies shipped from Missoula Fire Cache	19,212,420 pounds as of 9/22/88
Aircraft hours flown (Forest Service only)	24,950 as of 9/23/88
Smokejumper and smokejumper cargo	1,200
Air tanker	4,300
MAFFS	450
Lead plane	5,000
Transport (light and heavy)	3,000
Helicopter	11,000 (This does not include military hours.)
Total	24,950

FIRE PLANNING, PROGRAMS AND COMPUTER APPLICATIONS

Computers in fire management again! During the 1988 fire season, our fire computer teams equipped with six Dack kits provided record level performance within Region 1. Over 12 kits were in operation at one time within the Yellowstone Area Command alone as well as out-of-region personnel and kits assigned to single incidents, RICO and MAC support. The interregional standardization of equipment and training between R-1, R-5 and R-6 paid off!

The Region also field tested the next generation "INCINET" computer kits for WO fire management through out the western United States under fire conditions. This test will continue into 1989. Our thanks is extended to Bruce Keene, Lolo NF and Gary Vallieres, Flathead NF for their extra effort as Project Leaders for the MV fire testing and operations in 1988.

The Region continued to provide national support for development of National application software including the Automated Resource Ordering System (AROS), Cache Inventory System (CIS) and ACUSE.

We also installed the CIS program for Region 2 mid-season. This resulted in full automation of this National Cache within 1 week. Both R-1 and R-2 personnel collaborated on this successsful project.

The Region lead the development of job descriptions, job performance requirements and ICS position identification for computer support positions in ICS for the NWCG Training Team.

The National Fire Management Analysis System (NFMAS) application to outyear program development took another step forward, serving as the basis for development of the 1990 forest and regional programs. This process has been institutionalized within th R-1 PP&B system. Fuels and fire prevention component analysis was advanced with the layout of system approaches for the 1990 NFMAS revision now underway in the Region.

Fire Management Action Plans were used for the second year with improved results. The "5100-2" financial/ organization plan has been adopted as the basis for severity funding determinations when conditions exceed the planned norm. This process will be refined in 1989.

FIRE USE

The Fuel Management Program for Region 1 was a memorable year, especially in the unplanned ignition prescribed fire portion of the program. The year started out very dry in October-November, 1987. Because of this condition much of the scheduled burning had to be postponed until adequate moisture had been received. In December, when the burning season normally ends, the Montana State Airshed Group Program Coordinator was able to provide a two week extension of the burning season to help burners in the accomplishment of their targets.

A Regional Fuel Management Workshop was hosted by the IPNF at the Shoshone Work Center in May. The session was a successful forum for the exchange of new ideas and techniques. Industry was also invited to demonstrate the products they sell that are or could be used in the fuel management program.

The Fuel Management Planning and Treatment Guide was completed and distributed in May, also.

The unplanned ignition portion of the prescribed fire program experienced 19 incidents in 1988. Five of these fires were declared wildfires before the season ended. The largest of these, the Canyon Fire, escaped during the night of August 29-30 when it crossed the wilderness boundary and could no longer be held in prescription. Another extreme weather event on the night of September 5-6 sent the fire far outside the Forest boundary and caused significant losses on private lands. The fire ceased its spread soon after that and

reached a final size of over 245,000 acres. It is estimated that 180,000 acres burned in the September 5-6 event alone.

Another significant unplanned ignition prescribed fire was the Gates Park fire in the Bob Marshall Wilderness. It reached a final size of 50,840 acres and was maintained within prescription to a spread of 50,300 acres. On September 6 the Governor of Montana declared a Statewide closure of all public and private lands and all burning activities. The Gates Park Fire was declared a wildfire at that time to comply with the Governor's closure.

Planned Ignition Program

Forest	Accomplishment		Target		Percent	
	16.2	16.3	16.2	16.3	16.2	16.3
Beaverhead	600	5,154	600	4,991	100	103
Bitterroot	467	2,839	350	3,500	133	81
Idaho Panhandle	115	5,924	150	8,000	77	74
Clearwater	447	2,308	500	4,110	89	56
Custer	759	900	400	1,450	190	62
Deerlodge	215	1,602	1,850	500	12	320
Flathead	602	5,989	650	5,004	93	120
Gallatin	322	594	350	800	92	74
Helena	2,869	1,007	500	700	574	144
Kootenai	621	11,665	550	15,118	113	77
Lewis and Clark	863	1,201	800	1,125	108	107
Lolo	3,067	2,676	3,000	2,900	102	92
Nezperce	1,309	3,041	1,300	4,600	101	66
Total	12,256	44,900	11,000	52,798	111	85

16.2 Fuels Management Program
16.3 Brush Disposal Program

Unplanned Ignition Program

Area	Fire Name	Size	Remarks
Moose Creek (Nezperce)	Eagle Dog Gardiner	Spot 234 286	 Declared a wildfire on 8/22. Final size cannot be determined because it was absorbed by four adjacent wildfires. Declared a wildfire on 8/22. Final size 1920 acres)
Selway (Bitterroot)	Raven Creek Fritz Creek Badluck Archer Point North Star Eagle Creek	10 1 Spot Spot Spot 1	
FC-RONR (Bitterroot)	Squaw Peak	Spot	
Scapegoat (Lolo)	Cabin Creek Canyon Creek	Spot 60748	 Declared a wildfire on 8/30. Final size 239,819 acres.
Bob Marshall (Flathead)	Hahn Peak Pentagon	Spot 2	
Bob Marshall (Lewis and Clark)	Gates Park	50000	Declared a wildfire on 9/6. Final size 50408 acres.
Great Bear (Flathead)	Roaring Creek	Spot	
Absaroka-Beartooth (Custer)	Storm Creek	3000	Declared a wildfire on 7/3. Final size 107,847 acres.
Mallard Larken (Clearwater)	Jug Lake J.J.	Spot Spot	

Total unplanned ignition prescribed fires 19

Total Acres Burned (Prescribed) 114,282
Total Acres Burned (Wildfire) 285,671

Funding by Forest:

Forest	Project $	Prescribed fire acres	FFF $	Wildfire acres
Bitterroot	3,000	12		
Clearwater	500	Spot		
Custer	3,000	3,000	7,527,015	104,547
Lewis and Clark	260,000	70,636*	699,255	99,891**
Lolo	36,000	38,642	7,183,800	35,358
Helena	11,000	1,470		44,240
Flathead		2		
Nezperce		520		1,635
Total	313,500	114,282	15,410,070	285,671

* Gates Park (50,000)
Canyon Creek (20,636)

** Gates Park (408)
Canyon Creek (99,483)

AVIATION MANAGEMENT

The fire season of 1988 gave a new meaning to aviation operations, aircraft use and overall aviation management. In the early season, we provided assistance to Region 8 and 3. We also provided a smokejumper aircraft co-pilot to Region 4 in support of the DC-3 program in McCall, Idaho. As the Region 1 fire season developed, it became apparent additional aviation support was necessary. As the need increased, we used aircraft and personnel from every Region in the Forest Service network including Alaska. We were supported further by the United States Army, Montana Army National Guard and Idaho Army National Guard for extensive helicopter operations as well as the United States Air Force for aerial retardant needs using the Modular Airborne Firefighting Systems (MAFFS). Late in the season, we also had the support of the Canadian Aerial Firefighting Force. In support of all this influx of aviation resources, we solicited and received ground support from BLM, OAS, U.S. Customs and various State aviation specialists. These personnel helped in the areas of aviation safety, helicopter managers and crews, helicopter operations specialists and aircraft maintenance specialists. Through this concerted effort of professional aviation personnel, we completed the fire season with a zero accident rate. This was a major accomplishment considering the extreme conditions and the numbers of hours flown. Region 1 flew a total of 21,000 flight hours which includes the following breakdown:

Region 1 WCF aircraft	1300 flight hours
Helicopter	5500 flight hours
MAFFS	450 flight hours
General aviation and air tankers	13,750 flight hours

Overall, the Region had the heaviest use recorded to date with the highest degree of safety and mission accomplishment.

FIRE CACHE

The 1988 fire season was an unprecedented season. The Northern Region Fire Cache operated around the clock 7 days a week from July 24 through September 19. The Cache was completely emptied and restocked approximately 10 times. Including the fire activity this season. The Cache shipped 19,212,420 pounds of supplies, filled over 3,200 invoices, and supported over 2-1/2 million acres. These quantities do not include the support provided Canada, Region 9, or Alaska.

Over 100 casual fire cache employees were trained of which 40 percent were minorities and women.

Cache overhead people from every other cache in the U.S. and Alaska were assigned to support the Region 1 Cache.

COOPERATIVE FIRE AND PREVENTION

The Region focused attention on its prevention program in response to the increased number of person-caused fires we experienced in 1987. A new fireworks poster was developed and distributed three weeks prior to the 4th of July weekend. It cautioned people about using fireworks in the Forests and was posted on fireworks stands and other supply sources as well as throughout the Forest. Borrowing a theme from Region 5, and in conjunction with the Universities of Montana, Idaho, and North Dakota, and Montana State University, the Region produced a Smokey Bear poster featuring athletes from each of the schools. This is a minor bit of history because it is the first poster featuring college athletes in the nation. The 3,000 copies arrived too late to be used for the 1988 fire season, and they will be circulated in the spring of 1989.

We were into the fire restriction business by the second week in July and it continued with growing intensity until snow storms ended the fire season in September. The zone concept with interagency zone chairmen to coordinate restrictions between the agencies within their zones that was initiated in 1986 stood the test and proved itself to be a better system than the one that existed previously in which the control of restrictions was centralized int he Regional Office. As the season progressed, restrictions intensified from campfire and smoking limitations to a full closure of all Forests in Montana that was implemented in early September. This closure was made in cooperation with the Governor who closed all Forested lands in the State to nonessential activities and postponed early hunting seasons. During the height of the activity, Brisco Price from Region 8 was detailed to the Regional Office to handle the restriction program.

A new cooperative fire agreement was approved early in 1988 between Montana Rail Link, the State of Montana and the Forest Service. Montana Rail Link is a new railroad in the State with track from Billings west to Coeur d'Alene and feeder lines going north and south. The agreement is the first three party arrangement with any railroad in the Region and exemplifies how far cooperative endeavors with the States have come.

A Cooperative Fire Plan with the States of Montana, Idaho, and North Dakota was approved and implemented early in the fiscal year. It sets forth cooperative objectives for the Region and will provide program direction and financial planning for a 5-year period. It is the product of the fire analysis done by each State in the mid 80's.

Efforts to correct the Regional Fire Protection Imbalance continued during 1988 and were eliminated for Idaho in November 1987 when the imbalance was reduced to zero. This marked the end of a 4-year effort in that state transferred approximately 600,000 acres from Forest Service to State protection. In Montana, the State implemented protection in Block III in July and began protecting more than 413,000 acres that had previously been the responsibility of the Flathead and Lolo Forests. The increased cooperation necessitated by having one Agency protect lands belonging to another and the improved relationships that grew from reaching this agreement led to the development of an interagency dispatch center in northwest Montana. Participants are the Flathead and Kootenai National Forests and the Northwest Land Office of the State of Montana. A common communication system is being developed and the center was partially implemented in 1989. It is expected to be fully operational in 1989.

The Forest Service and the State also reached tentative agreement on Block IV which will transfer almost 623,000 acres currently protected by the Deerlodge and Beaverhead to State protection in 1990.,

The Northern Region Coordinating Group which is comprised of the three States, the BLM, The Forest Service, two areas of the BIA and the Park Service met early in 1988 to chart direction for the fire season and to wrestle with common problems. Subsequent meetings were not held because the same organizations were organized into a MAC Group as the fire situation became more severe. The MAC Group met twice daily from late July until mid-September to direct suppression efforts and make resource allocations during the unusually severe fire season.

Interagency teams were active in both Montana and Idaho as Montana is seriously considering participating int he interagency Class I teams int he Region.

Early in 1988 Aviation and Fire Management implemented the Regional Emergency and Disaster Plan that it had been developing. The plan focuses on giving immediate action guidelines for the Ranger District, Supervisor's Office and Regional Office for a dozen of the most common emergencies that occur in the Northern Region. It utilizes the fire dispatch network as its communication and notification link.

TRAINING

The Regional Training Program maintained a high level of National and Interagency involvement in 1988. A Fire Suppression Tactics Course entered its final stages of development and 26 mid-level Interagency courses were presented to over 800 trainees. A cadre of instructors traveled to numerous reservations and presented basic firefighter courses and the Crew Boss course. During the 1988 fire season the Northern Training Center assisted in the coordination of Basic Firefighter Training to over 400 individuals hired through the Job Service.

The Northern Training Center continued to stay abreast of new technology. A satellite downlink system was installed and a 50 inch portable large screen monitor was purchased. The MacIntosh computer located at the Training Center was updated to increase its capabilities and for compatibility with other like computers.

Other functions continue to use the training facilities when they were not in use by A&FM. However, there was an increase in denials of requests due to rooms already scheduled for use.

RETARDANT USE

Retardant Base	Gallons of Retardant Dropped
Missoula	1,300,000
Coeur d'Alene	250,950
Kalispell	476,300
Helena (MAFFS)	1,200,000
Helena (portable Chemonics plant for Canyon Creek)	1,000,000
Grangeville	204,800
West Yellowstone	1,000,000
Total	5,432,050

The Billings and Miles City Bases dropped an additional 228,000 gallons of retardant and over 114,000 gallons of additional retardant were used on the Custer National Forest from Rapid City. No figures are available for retardant used from the Greybull, Wyoming, base.

NORTHERN ROCKY MOUNTAIN AREA OVERHEAD TEAM DISPATCHES

Both National fire management teams and Area Type II teams were used extensively this past season. Type I teams from all across the lower 48 States and Alaska were brought to our aid. Twenty-five Type I and 52 Type II (total of 77) team dispatches for the season. This equates to approximately 627 team days spent on fire. One National team had six dispatches.

Type I Teams

Team	Incident	Location
Curtiss	Cook	BLM-MT
Poncin	Brewer	BLM-MT, SD
Curtiss	Canyon Creek	Helena, Lolo, Lewis and Clark
Poncin	Little Rock Creek	Bitterroot
Curtiss	Madison Gulch	Lolo
Curtiss	Warm Springs	Helena
Curtiss	Rock Creek	Bitterroot
Curtiss	Sawtooth	BLM-MT
Curtiss	Storm Creek	Custer
Poncin	Red Shoshone	Yellowstone National Park
Poncin	North Fork	Yellowstone National Park

Other National Type I Team Dispatches to Northern Rocky Mountain Area

Team	Incident	Location
Liebersbach	Air Patrol	BIA-MT
Kitchens	Boston Lake	Nezperce
Kitchens	Camp Creek	Nezperce/Bitterroot
Gallegos	Combination	Deerlodge
Caplinger	Footstool/Freeman Trail/ Gardiner	Nezperce/Bitterroot
Bungarz	Hellroaring	Gallatin
Kitchens	Ladder Creek	Nezperce
Wagenfehr	Lolo Creek	Lolo
Liebersbach	Lulu	BIA-MT
Jarrell	McMeekin	Nezperce
Wagenfehr	Red Bench	Flathead
Liebersbach	Slick	BIA-MT
Liebersbach	Storm	Custer
Caplinger	Upper Bear	Bitterroot/Nezperce

NRMA Class II Team Dispatches

Team	Incident	Size	Location
Challinor	Air Patrol	4050	BIA-MT
Bailey	Ajax	150	Beaverhead
Werhane	Beartrap	85	BLM-MT
McKee/Bailey	Blodgett	1800	Bitterroot
Preston/Stone	Boston Lake	29,520	Nezperce
Mosbaugh/Shell	Brewer	51,700	BLM-MT, SD
Shell	Brush Coulee	1,500	BIA-MT
Hodge	Cabin Creek 3	46	Idaho Panhandle
Stone	Camp Creek	1,250	Bitterroot/Nezperce
Stone/Gauger	Canyon Creek	240,600	Helena/Lolo/Lewis and Clark
Stone	Cedar Creek	120	Clearwater
Shell	Cinnamon Creek	3,940	Custer
Gregory	Corral Creek	11,262	Beaverhead
Hodge	Crescendo	170	Idaho Panhandle
Eckert	Deer Creek	2,650	BLM-MT
McKee	Dry Fork	13,051	Kootenai
McKee	Dunham	65	Lolo
Mosbaugh	Early Bird	22,000	BIA-MT
Gregory	Espy	5,460	State of Montana
Wright	Fantail	2,260	Custer
Hancock	Flex	2,500	BLM-MT
Stone	Giles Connection	140	Idaho Panhandle
Gauger	Glen Lake	120	Bitterroot
Mosbaugh	Gold Flint Mountain	350	Deerlodge
Bailey	Iron Claim	1,475	Lewis and Clark
Mosbaugh	Jay West	1,586	Clearwater
Corbin	Jim Town	1,336	BIA-MT
Preston/Stone	Ladder Creek	20,480	Nezperce
Stone	Lauer	380	Nezperce
Shell	Levi Creek	145	Beaverhead
Stone	Lick Creek	1,090	Lewis and Clark
Shell	Little Finger	2,445	BIA-MT
McKee	Little Rock Creek	2,434	Bitterroot
Bailey	Lodgepole	640	Flathead
Kutt	Lost Canyon	4,500	BIA-MT
Wright	Madison Gulch	1,009	Lolo
Gauger	Mike's Creek	5,400	Custer
Morris	Monument	5,774	BLM-MT
Mosbaugh	Opus 7	1,045	Clearwater
McKee	Rock Creek	2,962	Bitterroot
McKee/Bailey	Sawtooth	1,173	Bitterroot
Gregory	Schiller	15,250	Custer
Mosbaugh	Short Pine	5,300	BLM-SD
Challinor	Slick	9,940	BIA-MT
Bailey	South Lost Horse	6,280	Bitterroot
Shell	Storm Creek	107,847	Custer
Gregory	Straight Creek	466	Lewis and Clark
Mosbaugh	Sweetwater	8,000	State of Montana
McKee	Totem Peak	5,700	Bitterroot
Bailey	Upper Bear	7,180	Bitterroot/Nezperce
McKee	Upper Emery Creek	180	Flathead
Mosbaugh	Whitehall	1,000	State of Montana

STRUCTURAL PROTECTION/COOPERATION

Where did all the engines come from, especially the structural types? Because o the threat to structures both inside and out of Yellowstone Natinal Park, there was a large demand for Type I through Type 4 engines. The maximum number of engines on fire was on September 13 with 448 engines on duty--and approximately 60 percent were structural type. These engines came from all parts of the North, South, and Midwest States--as far away as Minnesota and Wisconsin and as close as Montana. These engines were from either rural or voluntary fire departments.

Much thanks goes out from all the wildland fire agencies for outstanding cooperation and use of both personnel and equipment!

CIVIL RIGHTS OFFICER POSITION

For the first time, the fire organization used a "Civil Rights" position on several fires. This was in response to a need identified at the National Civil Rights Meeting following the 1987 fire season.

There were no guidelines for this position, but the feedback received is that the position was generally well received and Incident Commanders believed it to be a valuable addition to their staff. A number of different approaches and methods of utilizing this position were used. It is believed that many Civil Rights related incidents were avoided or minimized because of this involvement. There was also evidence that the perceived need for this involvement was justified. There were incidents of racial discrimination, sexual harassment, and/or disparate treatment evident at almost every fire which were addressed in a timely manner.

Suggestions are being considered and hopefully guidelines will be in place for the utilization of this position for fire season 1989.

CRITICAL INCIDENT STRESS DEBRIEFING

Critical Incident Stress Debriefing teams were used on fires in Region 1 for the first time. A critical incident is any significant event outside the standard operating procedures. Examples include death, shelter deployment, assault, aircraft accident, or any traumatic injury.

Personnel from St. Patrick's Hospital in Missoula were qualified for this process and were used on the Brewer Fire, for the National Park Service in Yellowstone, and for Region 2 for an aircraft fatality, at Cooke City for standby, Canyon Creek fire, and for a Clover Mist fatality for Region 2. Another team was used for the Red Bench fatality.

Personnel Management is placing St. Patrick's Hospital under contract for Critical Incident Stress Debriefing team capability and for CISD training. This will not be an exclusive provider for the Region, but will be available. Coordination will be through Personnel Management. Fire will be one of many users of this program.

RETIREES

Retirees came in or called to all the various offices across the Region and asked what they could do to help. Most, if not all, were put to work. Their work assignments were varied. They worked in fire caches, parking aircraft, driving vehicles, dispatching, RICO/MAC, dealing with the press, contracting, etc. These folks have our special thanks for a job well done. Their knowledge from the past and their willingness to do what we

asked of them made it easier for the rest of us. Again, thank you retirees and don't stay away so long next time.

CREW USE

Again this past season we had a record number of crews on fire at a single time. On September 4 there were 479 crews on fire in this area with an addition 100 to 150 crews on back order. In addition, eight military battalions were called in which equates to about 200 crews--the most military crew use ever nationally.

The Montana and Idaho Indian Firefighter program broke all records for dispatches and funds earned. There were 631 Native American crew dispatches for earnings of over $11 million.

Throughout the Region there were approximately 30 Emergency Firefighter (EFF) crews employed and numerous EFF individuals employed as saw crews, camp crews, fire cache, and drivers.

CANADIANS

After a long wait and much debate, Canada was allowed to send air tankers, helicopters, and personnel to the United States to join the fire suppression effort. This occurred on or about September 7 and after 3 to 5 days of orientation, both equipment and personnel were ready for dispatch to various fires. The orientation and inspection took place at the Coeur d'Alene, Idaho, by the Washington Office with help from the Idaho Panhandle Forest. No air tankers or helicopters were used in this area. Several helicopter modules and water handling crews were dispatched to Yellowstone Park and some went to Red Bench and Canyon Creek Fires. Most of the personnel in this area were returned home around September 17.

Earlier in the season, the Missoula fire cache sent pumps and hose to Canada to help their situation. A National Type I long team was dispatched to Canada with this Region providing the National Fire Management Liaison--Jim Mann.

MILITARY

This was the second season in a row the regular military was used both on the fireline and in support. Region 6 used two battalions on the Silver Fire in 1987 and this area used eight battalions (equal to approximately 200 crews) this season. Six of the battalions were regular Army personnel and two were regular Marines. Six battalions (four Army and two Marines) were used in the Greater Yellowstone Area and two (Army) with their total support were sent to the Canyon Creek Fire (Lolo, Lewis and Clark, and Helena National Forests). Some of the troops were the same as those that went to the Silver Fire in 1987. All of the personnel that went to Yellowstone Park were there for approximately 20 days, while those that went to Canyon were only their a short time due to the weather change.

Overall this was another success story of the season. Once in place the military performed very well. They not only provided crews, but helicopters to support their personnel and others. This is a valuable resource and nationally we should continue to pursue the use of these crews.

Montana, North Dakota, and Idaho National Guard provided vehicles and helicopters with personnel. Some 500+ personnel and around 200 vehicles were used. Overall, the three units provided 18 helicopters with support personnel, fuelers, etc. Cooperation was outstanding between these units and the user agency. As in the past and in the future, the Guard units will play an important part in our suppression actions.

LOGISTICAL SUPPORT

All Dispatch Offices requested various numbers of dispatchers this season. The Regional Coordination Center had 63 dispatchers come and go. Several of these folks came and went several times during the course of the season.

The Billings Dispatch Center was a large user of out of area personnel. An Expanded Dispatch was established under the direction of Area Command in the Greater Yellowstone Area.

As we look back at the complexity of the situation, the logistical support group did an outstanding job.

INTERREGIONAL HOTSHOT CREWS

The Region's five interagency hotshot crews reported their busiest season ever in 1988. Inspite of the magnitude of the season, safety records and morale were excellent. Following is a fire dispatch summary for the crews:

Interagency Hotshot Crew	Days on Fire	Number of Fires	Overtime Hours
Bitterroot	94	18	680
Flathead	85	12	No report
Helena	93	15	810
Lolo	74	15	600
St. Joe	110	10	815

Crew highlights:

Bitterroot--On June 16 the Bitterroot crew drove to Minnesota and Michigan for what ended up to be a 36-day assignment. While on the Manistee National Forest in Michigan the crew was broken into three smaller crews, stationed in towns approximately 30 miles apart for several weeks. They went on fires with the local USFS crews and this allowed individuals from those crews to get some much needed rest. This was the first time a Hotshot Crew had ever been used in this method on the Manistee.

While on the Gates Park Fire, in the Bob Marshall Wilderness, the Bitterroot crew participated for several days in the first actual use of water gel explosives on a going fire in the lower 48 states.

The Bitterroot Hotshot Crew traveled over 11,000 miles on fire assignments this season. Unique, is that this travel was entirely via their crew vehicles.

Flathead--Most of the veterans of the Flathead crew returned to work in May. Early in the season they were busy with project work in the way of spring prescribed burning. They were only able to pursue project work for about a month, as the fire season started early and lasted late. Although the season was long and demanding, the crew maintained a very positive attitude through some real adversity.

Helena--The crew spent almost 40 days in spike camps on two different fires in the Bob Marshall Wilderness. On the Gates Park Fire, the IHC was one of only two crews who manned this 35,000-acre fire at any one point during the crew's time there. They were asked to cover over 12 miles of the fire's southern edge and needless

to say they were spread thin. They encountered extreme fire behavior, maintain a camp, cooked their own meals, weathered two snowstorms, and worked much of the time without direct supervision.

The IHC was twice dispatched to Yellowstone National Park, encountering there a much different fire management philosophy than they are accustomed to. The management tactic of "waiting for the fire to come" rather than "going after it" was trying mentally, and difficult at time to comprehend.

Lolo--The Lolo IHC spent the entire summer on fire assignments with the exception of 2 days of project work on the Missoula Ranger District and 2 days of burning for Ninemile Ranger District. The highlight of the summer was 5 weeks spend working under the Greater Yellowstone Area Command on Shoshone, North, and later the Hellroaring Fires. The Lolo IHC started the season with only five returning crewmembers and new overhead. Greg Power assumed the duties of Superintendent and Dewey Lumpry was detailed into the foreman's position. No lost time injuries were reported during the summer.

St. Joe--On June 15 the St. Joe IHC drove to Region 9 for presuppression positioning in Minnesota, Michigan, and Wisconsin for 35 days. Following return of the crew in mid-July, crew boss John Myhre left the crew to assume the position of AFMO on the Avery Ranger District, Idaho Panhandle NF. Crew foreman Jim O'Dell became the acting crew boss until his formal appointment to crew boss on September 25.

The crew spent 3 week in Yellowstone National Park experiencing some of the most intense and erratic fire behavior in recent times. Part of the crew was forced to evacuate by helicopter when the North Fork fire blew up on August 10. The remainder of the crew spent the night in a burned out safety zone after dense smoke prevented their evacuation.

FIRELINE EXPLOSIVES

A record number of feet of fireline explosives was used by Region. District, Forest, Smokejumpers, and contract blasters were active on a number of fires, including several in the Greater Yellowstone Area Command. Over 366,800 feet of water gel and 7-strand fireline explosives were used in the Northern Rocky Mountain Area.

Of particular interest was the decision to use water gel explosives on two prescribed fires--Gates Park and Canyon. Fire management reasoned that since the fires were not considered "wildfires" and since they would be using the explosives to shoot secondary or indirect line, it would be within accepted procedures to use water gel rather than 7-strand wildfire cord. Later, however, the Washington Office granted temporary approval for the use of water gel explosives in the suppression of wildfire. This decision was important in that both the Gates Park Fire and Canyon Creek Fire became wildfires later in the season. No inadvertant ignitions were experienced as a result of using water gel explosives.

SMOKEJUMPERS

The 1988 season saw a major change in the basing of smokejumpers in the Region. After several years of experimentation with a decentralized organization, the spike bases at Lincoln (Helena NF), Condon (Flathead NF) and Plains (Lolo NF) were closed and the smokejumpers at these bases returned to Missoula. Personnel budget reductions, and lack of efficiency and effectiveness, necessitated this action.

Additionally, the Missoula base is undergoing a major reorganization which, when complete, will result in 60 smokejumpers being based in Missoula. On a Regional level, Grangeville (Nezperce NF) will remain at 29 smokejumpers and West Yellowstone (Gallatin NF) at 15.

The Missoula base sponsored a Smokejumper Career Day at the Aerial Fire Depot in the early spring. This event was well attended and a special emphasis was placed in recruiting female, Native American and other minority candidates to apply for smokejumper positions in Region 1. A total of 15 rookie smokejumpers completed training at the Aerial Fire Depot in early July. Three of the rookies were trained under the Native American Program and 1 female rookie completed training. Four rookies were assigned to Grangeville, 4 to West Yellowstone and the remainder to Missoula at the completion of training.

The 1988 fire season was extraordinary for the Smokejumpers due to its length. The first smokejumper dispatch was February 22 and the last jumper returned from fire assignment on November 8. While the number of fire jumps made by Region 1 smokejumpers fell well short of the 1967 record (2220 vs 1186), the number of fire jumps per jumper was the second highest ever (11.26/smokejumper (1967) vs 10.98/smokejumper (1988)). West Yellowstone did establish a new record for fire jumps (480 vs 350).

Region 1 smokejumper bases sent booster crews to Regions 4, 5 and BLM Alaska. They also set up a spike base in Miles City, Montana, on June 27 and made 220 fire jumps to 25 fires before the base was closed on August 25.

In December, Missoula Smokejumper Superintendent, Larry Eisenman retired as an active smokejumper after a 30-year career with the smokejumper unit. Larry's leadership and expertise will be missed and we wish him the best in the future.

The following reports jump action to Northern Region (R-1) Forests only:

ITEM	HOME REGION	FROM OTHER REGIONS
1. Number of bases	*3	
2. Number of jumpers or crewpersons	108	
3. Number of fires attacked or jumped		
a. Initial Attack	**131	12
b. Follow-up	62	2
c. Total	193	14
4. Number of jumps to fires	**1011	93
5. Person-days on fires	5092	591

* In addition to the core base (Missoula), and satellite bases (West Yellowstone and Grangeville), there was a spike base established at Miles City, Montana. The Miles City spike base opened on June 28 and was administered with approximately 20 smokejumpers until it closed on August 25.

** Includes 2 cabin protection assignments (6 jumps) and 1 rescue assignment (6 jumps) from West Yellowstone.

Following is Region 1 smokejumper action to other than Region 1 Forests:

JUMPER ACTION	FIRES	JUMPS	PERSON-DAYS
From Missoula to:			
CM Russell NWR	1	10	44
State of Montana	1	10	26
Glacier NP	4	26	197
BIA	3	29	111
BLM-Montana	3	37	202
Salmon NF (R-4)	3	40	256
Bridger-Teton NF (R-4)	3	17	77
Shoshone NF (R-2)	1	4	13
Total	19	173	926
From West Yellowstone to:			
BIA	2	24	111
Bridger-Teton (R-4)	19	153	814
Shoshone NF (R-2)	2	26	290
Targhee NF (R-4)	7	46	182
Yellowstone NP	10	85	552
Total	40	334	1949
From Grangeville to:			
Glacier NP	1	10	81
Wallowa-Whitman NF (R-6)	1	10	36
Total	2	20	117
From Miles City to:			
BLM Montana	3	32	71
BIA	1	9	27
CM Russell NWR	1	10	42
Total	5	51	140
Region 1 action from other Region bases:			
Redding	10	14	48
McCall	6	10	39
BLM Alaska	7	22	106
Total	23	46	193
Walk-in fires			
West Yellowstone	25	27	279
Missoula	41	240	2312
Grangeville	10	16	241
Miles City	15	95	346
Total	91	378	3177

WORKSHEET A

AIRCRAFT USE REPORT

Date of Run: 12/08/88

AIRCRAFT USE REPORT

INCLUSIVE DATES: 10/01/87-09/30/88	SUPPLYING UNIT: REGION 1		USER UNIT: ALL	
TYPE OF USE	HOURS FLOWN			
	FS-OWNED	CONTRACT	TOTAL	HELICOPTER
AVIATION MANAGEMENT ACTIVITIES				
1. AIRCRAFT, PILOT, UNIT INSPECTIONS	93.70	27.20	120.90	1.80
2. PILOT TRAINING AND PROFICIENCY	105.50	4.60	110.10	2.40
3. AIRCRAFT MAINTENANCE-TEST FLIGHT	17.50	4.20	21.70	.20
4. OTHER	.00	2.20	2.20	.10
TOTAL	216.70	38.20	254.90	4.50
TOTAL HOURS 259.40				
FIRE SUPPRESSION ACTIVITIES				
5. PERSONNEL TRANSPORT	88.70	6053.77	6142.47	1659.20
6. RECONNAISSANCE	9.70	1164.22	1173.92	920.90
7. DETECTION	.00	2145.70	2145.70	14.30
8. AIR ATTACK	27.50	1340.10	1367.60	65.40
9. LEAD PLANE	702.00	76.10	778.10	.00
10. RETARDANT/WATER DELIVERY	.00	959.05	959.05	847.00
11. SMOKEJUMPER TRANSPORT	.00	520.00	520.00	.00
12. HELITACK	.00	.00	.00	104.00
13. RAPPELLER TRANSPORT	.00	.00	.00	.00
14. EQUIPMENT/SUPPLY TRANSPORT	9.80	481.98	491.78	973.10
15. INFRARED PHOTOGRAPHY	.00	2.80	2.80	36.00
16. AERIAL IGNITION	.00	4.20	4.20	12.80
17. OTHER	8.10	29.16	37.26	84.10
TOTAL	845.80	12777.08	13622.88	4716.80
TOTAL HOURS 18339.68				
OTHER ACTIVITIES				
18. PERSONNEL TRANSPORT	187.80	499.65	687.45	157.40
19. SURVEY/OBSERVATION	25.50	570.80	596.30	57.60
20. FERRY	9.80	86.88	96.68	185.60
21. ANIMAL/WILDLIFE COUNT	.00	110.35	110.35	17.10
22. SEARCH AND RESCUE	.00	.00	.00	2.50
23. LAW ENFORCEMENT/INVESTIGATIONS	.00	4.60	4.60	3.40
24. RESEARCH	.00	.00	.00	.00
25. AIR QUALITY MONITORING	.00	3.70	3.70	.00
26. FIRE PREVENTION	.00	.00	.00	.50
27. PRESCRIBED BURNING	.00	4.70	4.70	32.40
28. CARGO TRANSPORT HAZARDOUS MATERIALS	.00	1.50	1.50	.00
29. CARGO TRANSPORT	13.60	39.70	53.30	147.60
30. AERIAL PHOTOGRAPHY	1.00	26.00	27.00	10.90
31. INFRARED PHOTOGRAPHY	.00	.00	.00	.60
32. AERIAL IGNITION	.00	.00	.00	112.30

	FS-OWNED	CONTRACT	TOTAL	HELICOPTER
33. ACCIDENT INVESTIGATIONS	2.80	.00	2.80	1.20
34. OTHER	10.80	36.20	47.00	6.40
TOTAL	251.30	1384.08	1635.38	735.50
TOTAL HOURS 2370.88				
COLUMN TOTAL	1313.80	14199.36	15513.16	5456.80
GRAND TOTAL HOURS 20969.96				

WORKSHEET A (Continued)

AIRCRAFT USE REPORT

CARGO AND MATERIAL DROPPED

1. PARACARGO	211741
2. AIR FREIGHT	1275520
3. SLING	1117684
4. HELITORCH	62625
5. RETARDANT	2193441
6. WATER	566728

NUMBER OF PASSENGERS TRANSPORTED

	FIXED-WING	HELICOPTER
FIRE	17194	13152
OTHER	2138	802

WORKSHEET B

Date of Run: 12/08/88

AIRCRAFT USE REPORT

INCLUSIVE DATES: 10/01/87-09/30/88	**SUPPLYING UNIT:** REGION 1		**USER UNIT:** ALL	
TYPE OF USE	**HOURS FLOWN**			
	FS-OWNED	CONTRACT	TOTAL	HELICOPTER
OTHER ACTIVITIES				
1. AVIATION AND FIRE MANAGEMENT	132.70	222.80	355.50	420.50
2. ADMINISTRATIVE MANAGEMENT	7.30	129.74	137.04	11.30
3. ADMINISTRATIVE SERVICES	.00	8.30	8.30	4.10
4. CIVIL RIGHTS	.00	.00	.00	.00
5. COMPUTER SERVICES	2.10	.00	2.10	12.90
6. ENGINEERING	2.70	94.50	97.20	11.50
7. EXPERIMENT STATIONS	1.20	7.40	8.60	6.50
8. FISCAL AND ACCOUNTING MANAGEMENT	.00	.00	.00	.00
9. FOREST PEST MANAGEMENT	4.90	250.70	255.60	.00
10. HUMAN RESOURCE PROGRAMS	.00	.00	.00	.00
11. LANDS	2.90	2.90	5.80	.60
12. LAND MANAGEMENT PLANNING	3.00	1.00	4.00	.00
13. LAW ENFORCEMENT	.00	21.40	21.40	2.30
14. MINERALS AND GEOLOGY	1.70	5.67	7.37	4.40
15. OFFICE OF GENERAL COUNCIL	.00	.00	.00	.00
16. OFFICE OF INFORMATION	8.70	4.10	12.80	.00
17. PERSONNEL MANAGEMENT	2.80	4.00	6.80	.00
18. PROGRAM PLANNING AND BUDGET	2.00	2.10	4.10	.00
19. RANGE MANAGEMENT	3.20	16.10	19.30	20.30
20. RECREATION MANAGEMENT	7.40	68.20	75.60	99.50
21. REGIONAL FORESTER/FOREST SUPERVISOR	29.40	80.49	109.89	.00
22. STATE AND PRIVATE FORESTRY	.00	2.20	2.20	.00
23. TIMBER MANAGEMENT	16.30	29.00	45.30	38.80
24. WATERSHED AND AIR MANAGEMENT	.00	1.10	1.10	37.60
25. WILDLIFE MANAGEMENT	12.40	223.30	235.70	17.30
26. OTHER AGENCIES AND COOPERATORS	10.60	209.08	219.68	47.90
27. OTHER	.00	.00	.00	.00
TOTAL	251.30	1384.08	1635.38	735.50
TOTAL HOURS 2370.88				

	FIXED-WING	HELICOPTER
NUMBER OF PASSENGERS TRANSPORTED	1945	799

WORKSHEET C

Date of Run: 12/08/88

AIRCRAFT USE REPORT

INCLUSIVE DATES: 10/01/87-09/30/88				**SUPPLYING UNIT:** REGION 1		
	FIXED WING			**HELICOPTER**		
USER UNIT	AVIATION ACTIVITIES	FIRE ACTIVITIES	OTHER ACTIVITIES	AVIATION ACTIVITIES	FIRE ACTIVITIES	OTHER ACTIVITIES
BIA	.00	363.12	2.77	.00	4.80	.00
BLM	8.90	953.54	31.56	.10	103.00	15.10
CA	.00	4.05	.00	.00	.00	.00
FL	.00	3.10	.00	.00	.00	.00
GA	.00	2.30	.00	.00	.00	.00
ID	.00	44.75	60.00	.00	45.70	.00
MN	.00	15.00	.00	.00	.00	.00
MT	.00	224.23	109.80	.00	63.80	3.00
ND	.00	5.90	.00	.00	.00	.00
NPS	9.80	1549.51	13.15	.10	493.30	26.20
OR	.00	17.89	.00	.00	.00	.00
OTHR	.00	13.36	2.40	.00	.00	2.20
SD	.00	81.18	.00	.00	.00	.00
WA	.00	18.88	.00	.00	.00	.00
0102	.40	756.37	2.90	.00	20.20	.00
0103	1.00	537.28	2.20	.00	802.60	10.80
0104	.00	754.71	218.02	.00	274.90	147.70
0105	.00	730.12	24.20	.00	304.90	113.30
0108	.00	1208.56	44.00	.00	52.00	5.40
0109	16.10	344.31	15.20	1.80	32.80	4.80
0110	4.30	1052.62	139.94	.00	468.20	48.20
0111	6.70	350.83	24.95	.00	19.30	6.60
0112	3.30	525.75	25.10	.00	230.70	19.10
0114	.00	253.18	33.20	.00	14.70	29.70
0115	1.20	496.69	55.50	.10	428.30	83.10
0116	.00	482.90	57.40	.00	386.40	76.20
0117	1.70	1282.27	109.70	.00	586.20	71.80
0151	.00	.00	20.30	.00	.00	.00
0152	132.30	443.83	100.60	2.40	9.80	4.80
0156	.00	39.40	438.90	.00	.00	3.20
0202	.00	36.42	.00	.00	38.40	7.50
0213	.00	2.40	.00	.00	.00	.00
0214	.00	19.18	.00	.00	16.20	.00
0302	.00	4.70	.00	.00	.00	.00
0312	.00	.00	10.00	.00	.00	.00

USER UNIT	AVIATION ACTIVITIES	FIRE ACTIVITIES	OTHER ACTIVITIES	AVIATION ACTIVITIES	FIRE ACTIVITIES	OTHER ACTIVITIES
0316	.00	15.20	15.30	.00	.00	.00
0401	.00	18.37	.00	.00	.00	.00
0402	.00	25.04	.00	.00	.00	.00
0403	.00	196.00	.00	.00	.00	.00
0405	.00	6.62	.00	.00	.00	.00
0412	.00	20.77	1.20	.00	2.60	.00
0413	.00	5.40	.00	.00	.00	.00
0414	.00	.00	.00	.00	4.60	.00
0415	.00	101.57	1.81	.00	34.90	1.60
0460	.00	.00	18.20	.00	.00	.00
0505	.00	175.79	.85	.00	30.70	.00
0507	.00	11.08	.00	.00	.00	.00
0508	.00	13.92	.00	.00	.00	.00
0510	.00	2.35	.00	.00	.00	.00
0514	.00	1.80	.00	.00	.00	.00
0520	.00	57.40	.00	.00	.00	.00
0601	.00	21.60	.00	.00	.00	.00
0602	.00	.00	6.10	.00	.00	.00
0603	.00	3.65	2.60	.00	.00	.00
0605	.00	1.20	.00	.00	.00	.00
0607	.00	3.90	.00	.00	.00	.00
0608	.00	9.53	9.60	.00	.00	.00
0611	.00	43.47	.00	.00	158.90	38.50
0614	.00	6.20	.00	.00	31.60	.00
0615	.00	21.33	.93	.00	.00	.00
0616	.00	12.51	.00	.00	.00	.00
0617	.00	30.21	.00	.00	23.60	3.40
0618	.00	12.68	.00	.00	.00	.00
0621	.00	10.09	.00	.00	.00	.00
0627	.00	43.90	4.80	.00	.00	.00
0802	.00	14.67	.00	.00	.00	.00
0803	.00	.90	.00	.00	.00	.00
0804	.00	11.59	.00	.00	.00	.00
0809	.00	1.07	.00	.00	.00	.00
0811	.00	3.96	.00	.00	.00	.00
0831	.90	89.78	1.00	.00	.00	.00
0909	.00	.00	.00	.00	11.10	.00
0910	.00	.00	.00	.00	22.60	13.30
1301	.00	.00	2.00	.00	.00	.00

USER UNIT	AVIATION ACTIVITIES	FIRE ACTIVITIES	OTHER ACTIVITIES	AVIATION ACTIVITIES	FIRE ACTIVITIES	OTHER ACTIVITIES
1302	68.30	4.20	20.60	.00	.00	.00
1382	.00	2.60	6.20	.00	.00	.00
TOTAL	254.90	13622.88	1635.38	4.50	4716.80	735.50

PERSONNEL EMPLOYED ON WILDFIRE PRESUPPRESSION AND SUPPRESSION ACTIVITIES

FS-5100-8

Item	Sub-Total	Total
1. Regular appointed personnel a. Full-time fire management (20 pay periods or more) b. Part-time fire management c. Others used on presuppression sometime during year d. Others used on suppression e. Total (a + b + c + d)	131 152 360 1,431	2,072
2. Seasonal or short-term personnel a. Regular fire control (crews, firefighters, patrol, lookouts, etc.) b. Others (BD, KV, BR, R&T, etc.) who spent some time on fire control work c. Emergency firefighters d. Total (a + b + c)	590 2,094 294	2,978
3. Total number of casuals employed on fire suppression (Each reemployment counts as an employment)		15,748
4. Number of casuals (included in Item 3) employed for first time (Ranger's estimate is adequate)	3,326	
5. GRAND TOTAL (1e + 2d + 3)		20,798

LAND OWNERSHIP PROTECTION REPORT
(Summary of acres by states)

	PROTECTED BY THE FOREST SERVICE							
	State and Private Land *(Include county and municipal land)*							
STATE	Fee Basis	Offset Basis	Reimburse-ment Suppression Costs Only	Without Reimburse-ment	Other Federal Land	National Forest Land	Total	National Forest Land Protected by Others
MONTANA	1,433,869	278,342	1,100	115,744	1,105,509	15,715,459	18,650,023	1,313,932
IDAHO	199,415	232,124			62,423	6,389,095	6,883,057	529,523
WASHINGTON						118,794	118,794	
NORTH DAKOTA						1,105,789	1,105,789	
SOUTH DAKOTA						228,627	228,627	73,182
TOTAL	1,633,284	510,466	1,100	115,744	1,167,932	23,557,764	26,986,190	1,916,637

LAND OWNERSHIP PROTECTION REPORT

(Summary of acres by states)

	PROTECTED BY THE FOREST SERVICE							
	State and Private Land *(Include county and municipal land)*							
STATE	Fee Basis	Offset Basis	Reimbursement Suppression Costs Only	Without Reimbursement	Other Federal Land	National Forest Land	Total	National Forest Land Protected by Others
MONTANA								
Beaverhead				50,635	907,876	2,168,108	3,126,619	
Bitterroot	139,227					1,114,373	1,253,600	
Custer	7,352					587,503	594,855	517,634
Deerlodge				65,109	92,722	1,088,184	1,246,015	127,072
Flathead	128,823		1,100			2,277,585	2,407,508	168,852
Gallatin	377,028				18,000	1,736,117	2,131,145	
Helena *		90,476			71,022	955,068	1,116,566	21,605
Idaho Panhandle						28,496	28,496	
Kootenai	187,655	187,866			242	2,007,194	2,382,957	187,866
Lewis & Clark	61,468				15,010	1,724,750	1,801,228	118,635
Lolo	532,316				637	2,028,081	2,561,034	172,268
Total	1,433,869	278,342	1,100	115,744	1,105,509	15,715,459	18,650,023	1,313,932
IDAHO								
Bitterroot	52					464,165	464,217	
Clearwater	70,686					1,656,319	1,727,005	177,117
Idaho Panhandle	86,675	232,124			38,151	2,111,783	2,468,733	232,124
Kootenai						50,384	50,384	
Nezperce	42,002				24,272	2,106,444	2,172,718	120,282
Total	199,415	232,124			62,423	6,389,095	6,883,057	529,523

* 106,619 Acres Federal Land Protected by State (BLM)